ORIGIN AND HISTORY OF THE FAMOUS ARCHBALD POT-HOLE

ARCHBALD, LACKAWANNA COUNTY PENNSYLVANIA



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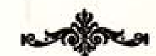
Grace Brogan

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COMPILED AND EDITED

BY

S. FLETCHER WEYBURN

SCRANTON, PENNSYLVANIA

PUBLISHED AT SCRANTON, PENNSYLVANIA

Grace Brogan

DEDICATED

To the Memory of

EDWARD JONES, ESQ.
Geologist and Pioneer Coal Operator of the
Lackawanna Valley
and Discoverer of the Archbald Pot-hole and
Charter Member of the Lackawanna Historical Society

Published by the Courtesy of His Son
Edward S. Jones, Esq.
of Blakely and Scranton, Pennsylvania
Philanthropist, Business Man, Banker, Coal Operator
and Donor of the New Memorial Wing of the
Mid-Valley Hospital at Blakely, Pennsylvania

—*The Editor*

PREFACE

One has said, "The written word far more than the spoken word has moulded the destiny of the world. The most eloquent sentences of the gifted orator can reach but a comparatively small audience and die as they strike the ear."

In presenting at this time this history of the Archbald Pot-Hole, one of the most famous pot-holes ever discovered, and owned by the Lackawanna Historical Society of Scranton, the editor desires to make permanent record for the use of the Society and those desiring to know of its location and origin.

In 1884 this pot-hole was discovered by a miner in the employ of Jones, Simpson & Co. In 1887, Col. C. B. Hackley expended the sum of $500.00 in restoring it and building a wall about it. In 1914 the Society secured a deed from Mrs. C. B. Hackley for the acre of land comprising the pot-hole.

This pot-hole has been visited by some of the notable scientists of the world, who have pronounced it to be one of the greatest phenomenon of its kind. The society has made frequent visitations to it. The most outstanding visitations being in 1887 under the leadership of Prof. J. C. Branner, geologist; in 1914 under the leadership of Prof. R. N. Davis, curator of the Everhart Museum and in 1927 under the leadership of the present secretary.

To further add to the value of this history I submit herewith the original surveys made by Prof. J. P. Leslie, State Geologist; Prof. J. C. Branner, Indiana State Geologist and Mr. Edward Jones of Jones, Simpson & Company, together with reminiscences and letters from Edward S. Jones, Esq., and others, who bear testimony to the greatness of this historic phenomenon of the glacial period, surpassing those of Lucerne, Switzerland. This history, the most inclusive one ever published, I trust will stimulate deeper interest among our people and the tourists who transverse our valley.

This pot-hole, for several years subject to the desecration of vandals, will be restored during the coming year. To this end the society has been promised the co-operation of the Lackawanna Motor Club and the Scranton Chamber of Commerce and markers will be placed leading from the Montdale pave to the pot-hole so that it can be made more accessible.

We solicit the co-operation of the general public.

—*The Editor*



Edward Jones, Esq., of Blakely, Penna.

LETTER OF EDWARD JONES, ESQ.

Olyphant, Pa., November 24, 1887.

Col. J. A. Price,
President of the Lackawanna Institute.

My dear Sir:

Agreeable to your request allow me, through you, to present to the Lackawanna Institute of History and Science a manuscript letter of J. P. Lesley, Esq., State Geologist, on the Archbald Glacial Pot-Hole, of course it will be placed on file among the papers of the Society for future reference. The Students of Geology, and more especially those who study that wonderful epoch in the world's history, the Glacial Period, have need to be thankful to you for the interest you have taken in bringing this great phenomenon before the scientific world, and also the interest you have manifested in the preservations of the pot-hole for the benefit of future scientists, the great pot-hole would have remained in comparative obscurity, if it were not for you. I have spent considerable time and some money in cleaning out and preserving it, and you have been instrumental in bringing it into public notice. Many theories have been advanced, as to how the pot-hole was formed, and the length of time required for its excavation, and in the course of time more theories will be brought out; but perhaps not more correct than those advanced by Professors Branner and Lesley. We might as well be satisfied with the theories already published, and let the true theory remain a profound mystery. One thing we are sure of, it has been formed by the action of running water. Job saith, "the waters wore the stones." But how long it takes the waters to wear through forty-five feet of solid Sandrock Job is silent on that point. At present, geological estimates of time are little else than mere conjectures, and the science of geology has hitherto afforded us no trustworthy means of estimating the positive length of the geological epoch. The glacial pot-hole tell us most emphatically, that these periods must be long, but how long, the pot-hole has failed to inform us.

I am very respectfully yours,

EDWARD JONES.

FROM A REPORT MADE BY PROF. J. P. LESLEY, STATE GEOLOGIST, TO EDWARD JONES, OF JONES, SIMPSON & CO., OF ARCHBALD, PENNA., UNDER DATE OF FEBRUARY 16, 1884

Referring to a report made on the Archbald Glacial Pot-hole by Prof. J. C. Branner, Geologist, he writes:

"It is a fine case of a well known phenomenon called a glacier pot-hole.

"The traveller on any of the Alpine glaciers has an opportunity of seeing how these holes were made, because similar ones are being made today. The surface ice of a glacier melts under the hot sunshine, flows over the surface of the ice, and plunges into crevasses to the bed of the valley down which the glacier is moving. These waterfalls make deep pot-holes wherever they keep rocks twirling round depressions of the valley bed.

"When a pot-hole is finished, by a change in the location of the waterfall, it gets filled with smaller rounded boulders, gravel and sand.

"If there were any horizontal coal beds not far underneath the bed of an Alpine Valley, such a coal bed would be sure to have one or more glacial pot-holes in it, perhaps going clear through it, filled with gravel.

"Now, in the cold age Canada, New England, New York, northern New Jersey and northern Pennsylvania down to a line stretching from Olean through Ralston, Berwick and Eckley to Belvidere on the Delaware River, and from Belvidere to Amboy were entirely covered with a solid, continuous sheet of ice, in some places 3,000 feet thick (in New Hampshire 6,000 feet) moving southward, carrying rocks of all kinds and sizes. Plowing and scratching the surface of the country, and making pot-holes of various depths from 10 to 70 or 80 feet, most of which are now concealed by a thick covering of drift, that is, the gravel, sand and clay which the ice carried forward, as it advanced, and left behind it when it melted.

"Many of these pot-holes have been accidentally uncovered (like yours) and have always been found filled with gravel of foreign origin, no matter what the formation was in which the pot-holes were excavated.

"In some exposed by cutting a mill-race west of Albany the bones of a Mammoth were found mixed with the gravel.

"We have calculated the thickness of the ice where it moved over Stroudsburg in Monroe County at about 1,500 feet. It was deep enough to cross the top of the Kittatinny mountain at Delaware Water Gap, where it has left on the top of the mountain large masses of limestone torn off from the outcrop in Godfrey's ridge near Stroudsburg, and therefore carried up by the ice a thousand feet. Others were pitched over the mountain and now lie on the southern slope facing Easton.

"The ice was thick enough to move over the great highlands of the Pocono mountains between Scranton and Stroudsburg, more than 2,000 feet above the sea.

"I have no doubt that the ice at Archbald was at least 2,000 feet thick, and that it carried fragments of your coal measure rocks, and of anthracite coal itself, from some of your exposed outcrops (exposed at that time, but covered up with drift now) from the bottom of the Lackawanna Valley to the top of the Bald mountain; and that they now lie scattered over the wilderness highland of the head waters of the Lehigh river, and that they will be discovered there, if ever railroad or other cuttings are made through the drift ridges on that table land."

FROM A SURVEY MADE IN 1884 BY PROF. J. C. BRANNER, GEOLOGIST OF THE ARCHBALD POT-HOLE AND THAT REGION OF LACKAWANNA VALLEY IN 1884

"By observation we know that pot-holes are made in the hard rock by water moving small stones, sand, gravel, and other wearing material in an approximately horizontal circle against, the walls of an incipient hole. The whirling motion may be imparted to the water in two different ways. The first is where a stream strikes the 'dead water' of an eddy on a tangent. The loose material in the bottom of such a pool is carried around the inside of the confining walls at a rate and with a force proportioned to the volume of the current, wearing the small stones round, and smoothing the walls of the hole. Pot-holes formed in this manner may be broad, but they are seldom very deep. The reason for this is that only a large and very powerful stream is capable of whirling the grinding material in the bottom of deep holes, though a comparatively small one may move it in a shallow one.

"The other way in which the whirling motion is imparted to the water is where the water falls from an elevation. In this case the motion of the water may not be, and probably seldom is in the regular circle, but it is a series of more or less confusing boundings and whirlings. With these facts in view, it is not difficult to see that these gigantic pot-holes at Archbald were formed by a stream of considerable volume falling from an elevation, for we know of no ordinary stream capable of whirling the stones in the bottom of this first hole, 45 feet deep, without great velocity.

"The shape of this wonderful excavation and its water worn walls clearly indicate its origin; but where is the stream that formed it that was capable of whirling the great boulders at its bottom.

"The small stream that lately flowed down the hollow in which the hole is situated evidently had nothing to do with its origin, for the area drained by the stream amounts to less than three-tenths of a square mile. The Lackawanna river at Archbald drains over 100 square miles. We must therefore go beyond existing topographical forms to find the necessary physical conditions.

"The geologic epoch next preceeding the present in this part of the world is known as the glacial epoch, and we know that during that epoch the northern part of the United States was buried beneath an enormous sheet of ice which crept down at an almost imperceptible rate from Canada and covered a large part of the continent, its southern margin stretching in a waving line from Staten Island to near Salamanaca, N. Y., thence to Louisville, Ky., St. Louis, Montana, Kansas, and northward to the west of Bismark, Dakota. All north of this line was a vast glacier, over whose surface existed the various conditions and accidents peculiar to continental glaciers.

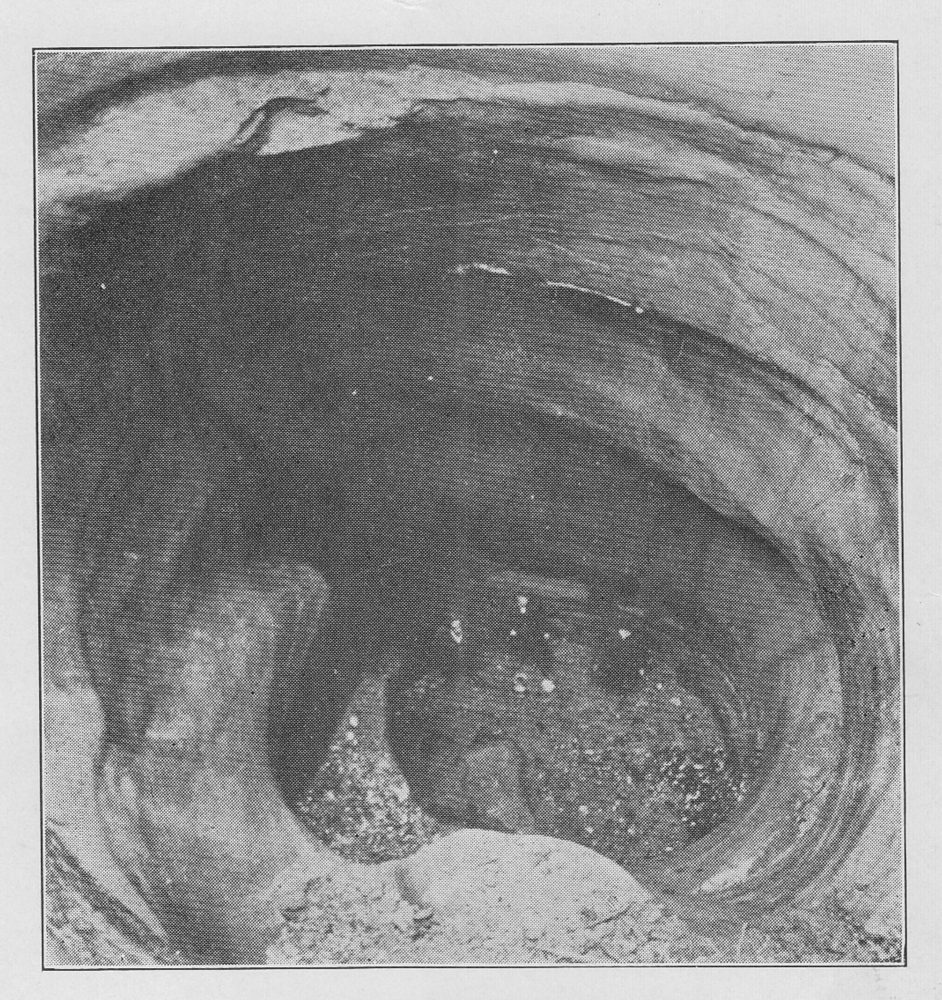
"The study of existing glaciers shows that the melting ice and snow upon the surfaces gives rise to surface streams which are charged with the mud, sand, and stones with which the ice is generally strewn.

"Now the surface of a glacier is influenced more or less by the shape of the bed over which it moves, a ridge or prominence across its bed causing it to break into great blocks. In Switzerland one of these breaks is known as a crevasse. A stream upon the surface of a glacier reaching a crevasse plunges into it, and generally runs the remaining length of the glacier beneath the ice.

"A large stream charged with mud, sand and gravel and cobblestones plunging into such an opening would naturally abrade the rock at the bottom, and if its action were long continued in the same place a hole would be worn. As the hole deepened the cutting and wearing material would be thrown from side to side, or be whirled around, and we should eventually have a pot-hole whose size and depth would depend upon first, the volume and force of the stream; second, the amount of abrading material carried by it, and third, the resistance offered by the bottom rock. The disappearance of glacial streams into such crevasses have been observed by all who have studied the existing glaciers of the Alps, Norway, Sweden or Alaska.

"Large numbers of such holes are found in the glacial regions of Norway where they are known as 'Giant Kettles'.

"In the case of the Archbald pot-holes, the ice marks upon the rocks in this region show that the glacier rose high above all our hills and mountains, and that its course was generally down the Lackawanna Valley.



Original View of the Pot-hole

"Hereabout a ridge from 1,200 to 1,260 feet above the Lackawanna stands out boldly across the valley separating the Carbondale end from the lower part of the valley, while the Lackawanna passes this obstruction by a strong deflection to the east from Jermyn and by flowing through the narrow channel at Archbald. When, near the close of the glacial epoch, the course of the ice brought somewhat under the influence of the bold topography of this region, it moved down this valley, and was broken in crevasses as it passed the summit of this tranverse ridge. Into these crevasses the streams that flowed from its melting surface plunged, charged with its usual debris, dashing aside loose obstructions at the bottom and then rapidly scoring the beginning of these pot-holes in the solid bed rock.

"As the ice pressed slowly forward across the ridge enormous sections broke from the projecting mass, the first crevasse closed, and another took its place in the same position, this causing the stream to fall upon nearly the same spot.

"I say nearly the same spot advisedly, for I am not disposed to believe that the water flowed from the ice at this place alone and it is not at all probably that these two great pot-holes are the only ones hereabout. The rocks a few hundred feet to the north-west of this locality show that they have also been shaped by falling water charged with wearing material, and I shall not be surprised to learn that other pot-holes are found along the south-west brow of this ridge between the pot-holes and Archbald.

"The height which the water fell must necessarily be more or less a matter of conjecture. While I have spoken of a great height, it is clear that the height could not have been so great as to dissipate the falling water into spray, for it would thus have lost to a great degree its wearing power. Neither do the conditions require that the water should have fallen perpendicularly, but simply that it should have had force to keep in motion the grinding material inside the hole.

"The fact that the ice marks occur on the summits of all the hills and mountains in this vicinity shows that the ice was, at one time, not less than 1,560 feet thick immediately above the pot-hole and 1,800 feet thick above the village of Archbald, while the probabilities are that it was considerably thicker at the time of its greatest development. It is improbable however that the hole was made when the ice was at its greatest thickness. It seems more consonant with what we may reasonably believe were the conditions of those times to suppose that toward the close of the ice epoch the glacier was guided partially by the hills bounding this valley, and that the rapid melting of the ice during the

period of retreat produced many and considerable streams over its surface which poured into its crevasses and wore out channels in the rocks beneath it."

NOTES ON THE GLACIAL STRIAE LACKAWANNA REGION

By Professor J. C. Branner, Geologist.

Striae in Vicinity of Archbald

"On the road from Archbald to South Canaan and 4,600′ where it crosses the Pierce Coal Company railroad—Bearing S 22 30° W.

"On the road leading from Archbald to Ridge Mines and 1,100′ above where it crosses the track of the gravity railroad—Bearing S 22 W, S 10° W.

"600′ west of where the light track of the gravity railroad crosses the 'Old Plank' road between Archbald and Peckville, on the ridge of the rock out of the railroad—Bearing S 20° W.

"About 100′ SW of the railroad crossing, just mentioned and the west side of the 'Old Plank' road.—Bearing S 10° W.

"Hilltop on the 'Old Plank' road between Archbald and Peckville. The first two are together and crosses each other.—Bearing, S 10° W, S 21° W, S 30° W.

"On the hill north of Archbald where the lumber road passes around the highest part of the hill.—Bearing, S 10° W.

"Above Archbald on the side of the river where the gravity railroad track crosses the Lackawanna; on the steep hillside. For some distance south of the bridge the bearing was the same for a large number of observations.—Bearing S 12° W.

"On the east side of the Lackawanna, above the D. & H. tracks and east of the bridge of the gravity railroad.—Bearing S 19° W.

"On the D. & H. tracks about 600′ south of the watertank next above Archbald.—Bearing S 15° W.

"On the 'Old Plank' road above Archbald 600′ north of the bridge of the gravity railway over the river. On west side of the stream. Bearing, S 14° W, S 18° W.

"Hillside about 700′ north of the last named point.—Bearing, S 30° W.

"In the lumber road upon the terrace about 2,000′ north of the gravity railway bridge above Archbald. These straiae are within a few feet of each other.—Bearing, S 18° W, S 20° W, S 22° 28° W."

PERSONAL OBSERVATIONS AND RECOLLECTIONS OF EDWARD S. JONES OF BLAKELY AND SCRANTON, PA.

The history of the earth's creation is written in unmistakable characters in its formation. One who is versed in the engrossing and fascinating study of geology can read the marvels recorded that have been preserved through the ages and various epochs of the earth's transition with the interest that a student can read from the pages of a printed book the matter which it contains. The mountains and valleys and rivers, the streams, the changes of the contour of the mountains and hills all reveal the changes which the earth has undergone.

In this section of Northeastern Pennsylvania in which we live, we note some of the changes indicated by the vast underlying stratas of carbon substance known to us as Anthracite Coal. Geologists tell us that for Nature to have provided this vast store of sunshine, heat and energy in the form of coal, the origin of which was vegetable matter, our valleys were covered in one epoch in the world's history by enormous forests of tropical growth, tree ferns of gigantic size, vast swamps inhabited by huge animals like the Ichthyosarus and Plesiosaurus. Impressions on the slates underlying and overlying our coal veins indicate most clearly evidence of ferns of almost endless variety; imprints and tracks of birds, flowers, and fish demonstrate the condition of the earth's surface during the period of the coal formation era. Then followed and indeterminate period of eons in which a cooling process of the earth's surface took place. It was during this glacial period that the famous pot-hole was formed. This natural phenomena is located on the Northwestern edge of the Anthracite coal field in the Borough of Archbald, Pennsylvania, on the lands then owned by Colonel C. B. Hackley, of New York, and leased to the coal operating firm of Jones, Simpson and Company, of which the late Edward Jones of Blakely, Pennsylvania, was the senior partner and the directing head.

The theory of the formation of this pot-hole is that the entire territory of the valley of the Lackawanna River was covered by a huge glacier which moved slowly from the north to the south. During the movement of this glacier, a crevice or crevices were formed, and the heat of the sun melting the ice on the surface of the glacier caused the water to fall through a crevice or crevices from a great height, forming a whirlpool at the bottom and cutting through the hard sandstone rock until a whirling mass of oval and round stones cut through the solid strata to the bottom of the vein of coal.

During the mining of what is now known as the Clark or Archbald Seam, a blast of powder was fired and the loose material was removed, leaving a spirally cut hole of approximately 25 feet in diameter and 45 feet in depth. A small dome of coal was left about in the center of the hole, the water having evidently found a passage through some subterranean channel—either through the crevices of the rock or the vein of coal at this point, because there was no indication of the hole being cut deeper than the bottom of the coal vein, or the glacier moved on, or the weight of material to be whirled about became to heavy to be moved longer.

In 1884 a miner by the name of Patrick Mahon, of Archbald, in the employ of Jones, Simpson and Company, was driving a heading in what was known as the drift mine of the company. The heading was on the first lift of an inclined plane. The miner fired a blast, and when the outpouring of stones and water from the hole came rushing through,. the miners in that vicinity of the mine called out a cry of alarm and ran from the mine for the safety of their lives, imagining that the mountain was coming in upon them.

Edward Jones of Blakely, managing head of the mining company, was summoned and directed that an examination be made and gave instructions to have the excavation completed. About three hundred mine carloads of smooth, round and oval stones were taken out, or approximately 800 to 1,000 tons of matter, all the material showing the action of the water and continuous grinding, until many of the stones had become smooth and rounded surfaces as though they had undergone a course of polishing. These stones varied from the size of a hen's egg to larger stones 15 to 20 pounds in weight.

The discovery of this glacial pot-hole was reported by Mr. Jones to Colonel Hackley, the land-owner, and he appropriated the sum of $500 to have a retaining wall and fence built around this geological wonder. About 1,000 feet further north another hole of similiar character was encountered, and when this was tapped and the surface settled down some 12 or 15 feet, it was decided not to do the necessary excavating, as it was deemed to be a larger hole than the one first discovered, and the expense involved was to be considered. As Mr. Jones was not only a coal operator but a deep student, and geology was one of his studies, he made a careful survey of the conditions of the rock strata of the surrounding country and invited Professor J. C. Branner, state geologist in the year 1886 (?) to visit Archbald and make further investigations with the idea of determining how the famous glacial pothole had been formed. The determination was much as has referred to previously in this article. A large company was also invited by Mr.

Jones to attend the exercises which were held at that time, as shown by a reproduction of a picture taken at that time. I remember distinctly a remark that was made by Professor Branner during his address to the company of people assembled as the guests of Mr. Jones. He said that "During Napoleon's campaign in Egypt, as he sat on his horse under the shadow of the pyramids, he addressed his soldiers as follows: 'My men, forty centuries look down upon us.' " Professor Branner, referring to the pot-hole, said, "My friends, millions of years look up upon us."

During the time that I was part owner and the general manager of Jones, Simpson & Company, Forest Mining Company, and the Raymond Coal Company, I entertained many hundreds of people as guests on their visit to see this glacial wonder, known as the largest specimen of its kind in the world. I have visited on two different occasions the much advertised potholes of Switzerland, in the Garden of Lucerne, but they are in no way comparable in size or with the one in Archbald Borough. There are at Lucerne some 25 or 30 in number, but are relatively small. In numerous places during my travels I have found along the banks and beds of rivers and streams numerous pot-holes of various beauty and sies, but I have never seen anything on the grand scale of the one which we have in the Lackawanna Valley.

It is indeed gratifying to know that the Lackawanna Historical Society has taken up this matter of renewing interest in this subject, as it can be made a matter of very practical geological and scientific interest to the young people of our schools, as it is unique as well as being a matter of great geological interest.

BIOGRAPHY OF PROFESSOR JOHN CASPER BRANNER

By Frederick Lord Brown

John Casper Branner, Sc. D., Ph. D., L. L. D., was born in New Market, East Tennessee, on July 4, 1850. Entered Cornell University in 1870. In 1874, before graduating, he left to join Professor Charles Frederick Hartt (then imperial geologist under Don Pedro) to assist in a geological survey of Brazil. Upon the death of Professor Hartt in 1875, he became Director of the Imperial Geological Commission in Brazil.

He returned to Cornell and graduated with the class of 1882, where I first met him and had the pleasure to walk beside him in the bacheloric parade.

Soon after graduation, he returned to Brazil, at the request of Thomas A. Edison, and secured for him a plant or tree the pith of which, carbonized, was the first material from which was made successfully the filament for the original Edison Incandescent Electric Light.

In 1883 he was appointed Topographical Geologist for Survey in Pennsylvania. While in that position he had, for some time, headquarters in Scranton; it is was during this period that the visit was made by a large party of the Historical Society to the Pot-hole at Archbald.

From here he went to Indiana University as Professor of Geology.

He was State Geologist of Arkansas from 1887 to 1893.

In 1891, at the founding of Stanford University, he went there as professor of Geology and organized The Department of Geology and Mining. Becoming Vice President, and in 1913 was chosen President of the University. Retiring as president emeritus in 1917. He died at Palo Alto, California, on March 1, 1922.

In addition he was a prolific writer, having published a list of over four hundred and dealing with a wide range of subjects. He was a linguist, speaking many languages fluently. His relation with Brazil were very close, one of his large works being The Geology of Brazil. He also wrote grammar of the Portugese language and his last work was a translation from the Portugese of Alexander Herculano's History of the Origin and Establishment of the Inquisition in Portugal. His "How and Why Stories", a collection of tales told by negroes in Tennessee, Dr. Jordan says, is written in a style almost perfect and quite worthy of a place beside the Georgia tales of Uncle Remus.

BIOGRAPHY OF EDWARD JONES, ESQ. OF BLAKELY, PENNA.

Edward Jones, Esq., the subject of this sketch, was born on Splot Farm, in the parish of Saint Donats, Glamorganshire, South Wales, April 3, 1812. He was educated in mathematics, navigation, civil engineering, and the usual branches of a good English education. In 1837, at the age of twenty-three, he came to this country and located in Carbondale, Pa. It was there he laid the foundation of his thorough knowledge of the coal business which afterwards brought to him wealth and position. In 1854 he removed to Archbald, Pa., and was made superintendent of the coal operation of the Delaware & Hudson Canal Company at that place—a position which he held until 1859, when he resigned and formed a coal company by the name of Eaton & Company. It proved to be a financial success. The firm was later changed to Jones, Simpson & Co. He opened the first mine in Olyphant, which developed into one of the leading collieries in Lackawanna County. He removed to Blakely in 1859 and formed the coal company of E. Jones & Co. This firm continued to do business for six years, when they sold out to the Delaware & Hudson Company at considerable profit. He was appointed by Jay Gould in 1872, superintendent of the Erie Colliery at Glenwood. He was a member of the Pierce Coal Company of Winton and held the position of president. This company was engaged in the mining of coal from a large tract of coal land and shipping it to the New York market. In 1870 he commenced active banking with the Merchants and Mechanics Bank of Scranton, which was organized under its charter, August 6, 1870, with a capital stock of $500,000. At that time he was elected a director, and November 18, 1882, he was elected president of the bank. Mr. Jones was a gentleman of unsullied reputation, and by uprightness of character and honorable dealing with his fellow men, commanded the highest respect of all who knew him. During his busy life, Mr. Jones found time to study well his favorite science—that of geology.

He was possessed of a kind and charitable heart. His leisure time, when not engaged in the cares and responsibilities of his extensive business, was spent with his family. Home was everything to him. There was no man kinder and more affectionate to his family than Edward Jones. His library, which was an extensive one, was composed of the choicest and best selected work on History, Geology and Science.

His Blakely home, Tyn-y-vron, was embowered by unbrageous trees planted by his own hands many years ago, and surrounded by a beautiful lawn, variegated flowers and almost innumerable fruit trees. Directly in front, a short distance away, rises the rugged mountain, from which blows the pure, fresh air, making it one of the healthiest spots in Pennsylvania.

Edward Jones took an active part in public life, and in 1877 was the nominee of the Republican party for Congress. Although the district at that time was normally Democratic by 2,500 votes, Mr. Jones only failed of election by nineteen votes. He was a member of Kingsbury Lodge, Free and Accepted Masons; the Independent Order of Odd Fellows; and a trustee of Olyphant Presbyterian Church. Edward Jones married, in New York City, in 1846, Mary Elizabeth, daughter of Richard Jones, of Llanidloes, Wales, and they were the parents of eight children: Edward and Elizabeth, Thomas E., John R., Margaret J., (Mrs. S. N. Callender), all deceased. Those now living are Mary, (Mrs. F. B. Ward, of Philadelphia), Jeanette and Edward S.

BIOGRAPHY OF EDWARD S. JONES, ESQ. OF BLAKELY AND SCRANTON, PA.

Edward S. Jones, youngest child of Edward and Mary Elizabeth (Jones) Jones, was born in Blakely, Pennsylvania. He was educated in the Public Schools and at Wyoming Seminary and the Wyoming Commercial College, Kingston, Pennsylvania, his father then offered him a college education, which was declined in favor of a business career. He at once entered business life after leaving the seminary, becoming assistant manager of the Archbald Mines, owned and operated by Jones, Simpson & Company, and upon the death of his father became general manager of the property. Organizing the Raymond Coal Company in 1892 and the Forest Mining Company, he acted as their general manger up to the time of its being absorbed through purchase by the New York, Ontario & Western Railroad in 1900, after which he became a private operator and promoter. In 1903 he organized the Blue Creek Coal and Land Company, which owns a vast area of valuable coal lands in West Virginia; and the Kanawha & West Virginia Railroad Company, which he built, and operated, a road extending from Charleston, the capital of West Virginia, to the heart of the Kanawha coal fields, he becoming president of both of these corporations. In 1916, the Kanawha & West Virginia Railroad was absorbed



Edward S. Jones, Esq., of Blakely and Scranton, Penna.

by the New York Central Coal Lines, through purchase. In 1905 he was instrumental in bringing about a merger of several of the largest producing coal companies in West Virginia, under the corporate title of the New River Company, of which for many years he served as a director and member of the executive committee of the board.

While coal mining and coal mining companies have always been his principal business lines, he departed therefrom in 1902 and organized the First National Bank of Olyphant, was elected its first president, and for fifteen years guided its destinies as executive head. In 1917 he resigned the presidency, his other business interests pressing him so heavily that he could not give his bank responsibilities their due attention. His connection with the bank and his bringing it from a newly created institution to a condition of most substantial prosperity, is one of the incidents in a busy business career in which Mr. Jones may take great satisfaction. He is a director of The Traders National Bank of Scranton, Penna.; the Klots Throwing Company, Inc., of New York, one of the largest silk throwing companies in the country; the vice-president of the Meadow River Coal Company, of West Virginia; president of The Forest Store Company, of Blakely, West Virginia, B. C. C. & L. Company, and president and founder of the Mid-Valley Hospital Association, of Blakely, Pennsylvania. His clubs are the Scranton, Scranton Country, and member of Chamber of Commerce, the Engineers, and Kiwanis, all of Scranton. He is also a member of the American Institute of Mining and Metallurgical Engineers, of New York City, as well as president of the board of trustees of the Presbyterian Church of Olyphant, Pennsylvania. Mr. Jones was also one of the prime movers in having the county road constructed through Lackawanna County, one of the most important improvements ever made in the county.

He is a noted philanthropist and benefactor, his latest gift being the magnificient new memorial wing given in memory of his parents, Edward and Mary Jones, to the Mid-Valley Hospital, Blakely, Pennsylvania, and known as the Jones Memorial.

Mr. Jones resides in the beautiful homestead of his father, Tyn-y-vron, Blakely, Pa., one of the familiar landmarks of the county. During the last decade Mr. Jones has spent much time in extensive travel, visiting nearly every country in the world, and is frequently called upon to address civic clubs and societies on the lecture platform.

LETTER OF FREDERICK LORD BROWN

It affords me great pleasure to comply with your request for a brief biography of John Casper Branner, who was the professional conductor in the first public trip of observation to the "Pot-hole" at Archbald.

There is one incident in connection with that trip which warrants a proper record. After viewing the "Pot-hole" from above and also from below in the coal mines, Dr. Branner led the party to a slight eminence nearby where he delivered a geological description of the "Pot-hole" and explained how it was formed, concluding with the statement that the most peculiar fact is that "The Pot-hole" is not where it should be, as from the spoor and all other present surface indications it should be where you see that clump of trees. I was not alone in thinking he claimed too much exactness for his science when he questioned the proper location of "The Pot-hole," which was there as evidence to maintain by its existence the correctness of its location. Later events, however, proved the correctness of his claim, and I at least have since had very much greater regard for Geology of the Glacial Period as an exact science. On our return as we passed the clump of trees, he said right in there is where "The Pot-hole" should be, and as he stopped and pointed to the place he assumed for a second or two a tense attitude and then rushed in among the trees, jumped into a slight depression—which had occurred subsequent to his survey—peered into the crevices, and shouted, "It is here just where it should be", for there was exposed the worn sides of a hole of considerably greater area than that of "The Pot-hole" we had viewed. Later when the earth and stones were removed the hole was found to be no great depth, indicating that after the formation of *"The Pot-hole" there had been a movement of the glacier which left its mark upon the rocks and changed the point of rupture through which the floods fell and churned a hole into the solid rocks, but that before sufficient ages had passed to take this hole into, or through, the coal vein the entire glacier was dislodged or dissipated.

* This hole had been tapped before Prof. Branner made this remark

REMINISCENSES OF PROFESSOR R. N. DAVIS

When I went to Archbald in 1884 as principal of the schools I soon heard of the great pot-hole that had recently been discovered in the mining operations. At my earliest convenience I visited the curiosity. Directly after the discovery of the pot-hole it was utilized as an air-shaft. A fire was kept burning in the bottom of the hole and this made an up-draft from the mine. At the time of my visit mining operations had been extended so that this primitive kind of ventilation had to be abandoned and a fan had been installed in another place.

In the summer of 1886 this society conducted a "Summer School of Geology" under the direction of Prof. J. C. Branner. Various field trips were taken but the one of the greatest to the class and to the public was the one to the Archbald Pot-hole. The party went from Scranton by the D. & H. and Edward Jones of the Coal Company had provided seats on some flat cars so the company was transported on the mine railroad to the destination. Besides the distinguished instructor of the class Professor W. R. Dudley of Cornell University and Professor T. C. Porter of Lafayette were in the party. Dr. Branner explained how, in his opinion, the pot-hole was formed. Briefly, it must have been made during the latter part of the glacial epoch when the great ice sheet had receded but a valley glacier still flowed lengthwise of the Lackawanna Valley. The irregular ridge that extends across the valley at Archbald made the valley glacier break into crevasses and the surface water of the glacier flowing down the crevasses bored holes in the rock and then flowed on as a sub-glacial stream. Dr. Branner said there were, no doubt, other pot-holes in the vicinity and in fact one had been encountered in the mining operations a thousand feet to the northeast but had not been opened on account of the expense.

Colonel Hackley, the owner of the land on which the pot-hole is located, was so impressed by the public interest in the great curiosity that he appropriated $500.00 to improving the surroundings. The underbrush was cut away and a substantial wall and iron railing was built about the pot-hole. Subsequent mining operations and the work of vandals have greatly impaired the appearance of the pot-hole.

Soon after the revival of this society in 1914 a deed for an acre of land with the pot hole as a center was received from Mrs. Hackley. Mr. A. B. Dunning, engineer, and the writer then visited the place and drove steel rods at three of the corners of the acre plot and a large rock happened to be at one of the corners was marked with a cross chiseled into it.

Further search in the vicinity revealed that there were several such formations on this pinnacle of a hill nearly four hundred feet above the level of the Lackawanna River. One well formed hole was on the under side of a rock. This rock was evidently a detached boulder and had been "plucked" from the exposed ledge less than a hundred feet away and turned over as it was pushed along. I can not imagine stronger evidence of the correctness of Professor Branner's explanation of the formation of the great pot-hole.

A TESTIMONIAL FROM MRS. L. A. WATRES

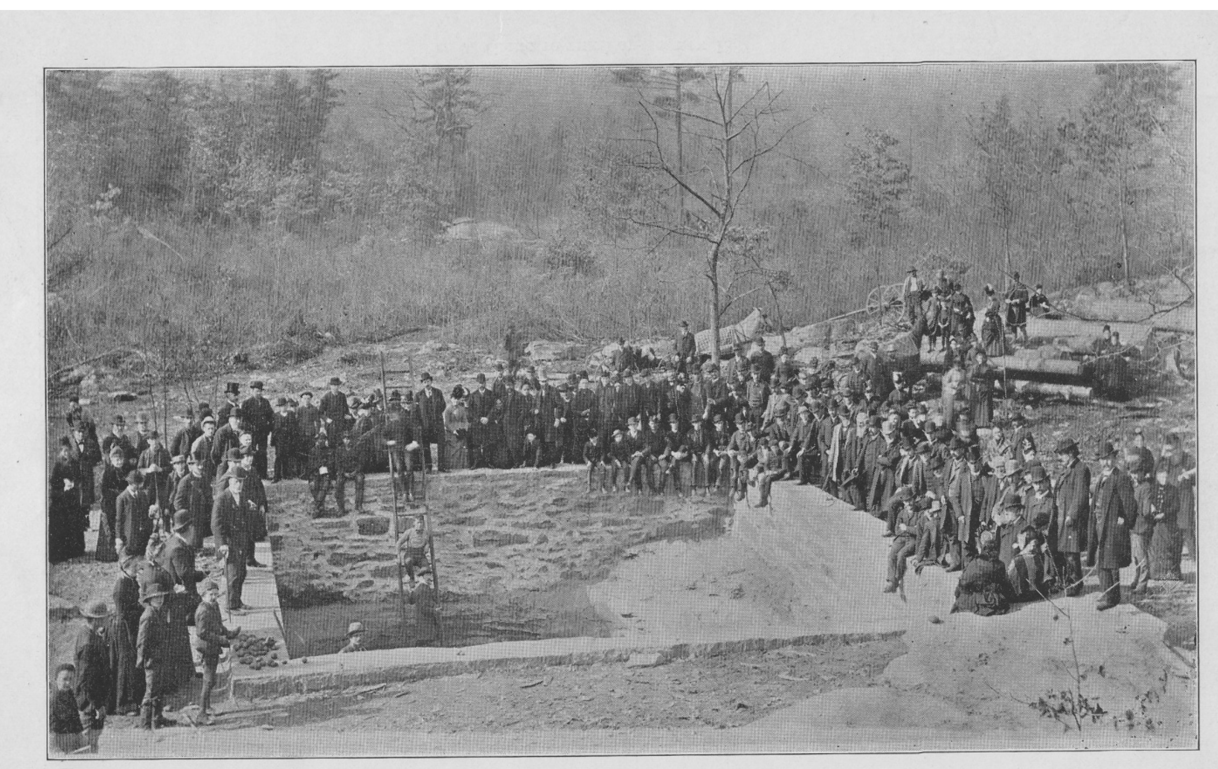
During a visit to Switzerland, we went to see that wonderful memorial the Lion of Lucerne carved out of solid sandstone rock from the model by Thorwaldsen in 1821, a tribute to the valor of the Swiss Guard who fell in defence of the French Royal Family in the Tuilleries in 1792. This was a most impressive work of art.

Guides were waiting to conduct us on to the Glacier Garden or Park, a short distance further on. Here we were shown thirty-two pot-holes of various sizes, the largest one being twenty-six feet across and thirty feet deep. These were worn in the sandstone rock by centuries of the action of stupendous glaciers, a striking contrast to the monument carved by man. These pot-holes were discovered in 1872, about fifty years after the Lion was carved. We were given the opportunity of seeing them from all angles by a series of steps and bridges. Our guide understood English by reason of having resided in America for some time. He asked where we lived and when I told him Scranton he said: *"Why that is not far from that most wonderful pot-hole near Archbald."* If we had known of it before that time, we had not been sufficiently impressed to visit it until many years later when the Historical Society invited us to go there.

It frequently happens that one postpones seeing things of great interest that are close at hand and there are doubtless many in Scranton and vicinity who, like us, have visited the Lucerne Gardens but have never visited the Archbald Pot-hole. The Historical Society is taking steps now, to afford an opportunity for people to go there with greater ease than heretofore.



Going to the Pot-hole in 1887



Visitation to the Pot-hole in 1887

LACKAWANNA HISTORICAL SOCIETY

Library Open Tuesday and Friday Afternoons Each Week
412 Scranton Lackawanna Trust Building

Annual Dues $2.00

LACKAWANNA HISTORICAL SOCIETY

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* Deceased

ENDOWMENT FUNDS
Greatly Needed by the Society
PERPETUITY OF FAMILY NAMES ASSURED

In looking over the records of other historical societies the writer has been impressed with the support given by the citizens of the various localities, chiefly the provisions made for the perpetuity of their society by means of endowments.

Take, for instance, the Wyoming Historical and Geological Society of Wilkes-Barre. They publish a list of special funds set aside by gifts or bequests amounting to over $20,000. This fund is to be kept intact, and the interest to be used only for the purchase of books, for lectures and for publishing their records, etc. To meet the growing needs of our society it is suggested that the attention of our members and friends be called to this most worthy way of helping the society.

The following list is taken from a recent report of Wyoming Historical and Geological Society:

SPECIAL FUNDS

The Zebulon Butler Fund.
The Coxe Family Fund.
The Horace Edwin Hayden Fund.
The Andrew Hunlock Fund.
The Ralph L. Lacoe Fund.
The Augustus C. Laning Fund.
The Charles A. Miner Fund.
The Sheldon Reynolds Fund.
The Stanley Woodward Fund.
The Harrison Wright Fund.
The Joseph Swift Balch Fund.
The Katherine (Searle) McCartney Fund.
The Dr. Charles F. Ingham Fund.
And Others.

Let your lawyer or Trust Company incorporate in your will the following bequest:

"I give and bequeath to the 'Lackawanna Historical Society', the sum of ....
for the said society absolutely."

Note: It is important that the history and biography of prominent families of the Lackawanna Valley be perpetuated and handled down to posterity.

PERSONALLY CONDUCTED EXCURSIONS OF THE OF THE LACKAWANNA HISTORICAL SOCIETY

IN LACKAWANNA AND WYOMING VALLEYS SINCE ITS ORGANIZATION IN 1886

THE WYOMING HISTORICAL AND GEOGRAPHICAL SOCIETY
THE FORTS OF WYOMING
THE OLD CHURCH AT FORTY FORT
QUEEN ESTHER'S ROCK
WYOMING MONUMENT
OLD FORGE LOCATED AT OLD FORGE
CAMPBELL'S LEDGE
BALD MOUNTAIN
SPRING BROOK
THE OLD ORE MINE
THE ARCHBALD GLACIAL POT-HOLE
THE OLD APPLE TREE LOCATION AND MARKER PLACED BY THE SOCIETY
THE OLD INDIAN SPRING ON MOOSIC MOUNTAIN
THE OLD SLOCUM FORGE LOCATION
THE SCRANTON-PLATT BUILDING ERECTED IN 1851
THE EVERHART MUSEUM
THE OLD GRIST MILL STONE PLACED IN NAY AUG PARK

Note: Personally conducted excursions will be made during the summer of 1929 on application to the Secretary of twenty or more members and friends.